

A formal redefinition of the family follows; of necessity it includes some characters which may, with the discovery of new forms, prove to be of less than family significance.

Family SYNGENODRILIDAE Michaelsen
(1928)

Sigmoid setae single-pointed, eight per segment, in two ventral and two lateral bundles. Dorsal pores wanting. Clitellum in a single layer of cells, in the region of the male and female pores. One pair of male pores at 12/13; one pair of female pores on xiv; two pairs of spermathecal pores in 7/8 and 8/9. Two esophageal gizzards in viii and ix; no calciferous glands; intestine without typhlosole. Six

pairs of lateral hearts in vi to xi (?), those of vi and vii communicating with lateral "extra-esophageal" vessels. One pair of holonephridia per segment; ectal nephridial duct with a dilated vesicle. Holandric, two pairs of testes and spermiducal funnels in x and xi, respectively, enclosed in testis sacs; paired seminal vesicles depending backward from 10/11, enclosed within the ovisacs. One pair of ovaries in xiii; ovisacs depending backwards from 13/14 into xx; eggs yolky. Three pairs of simple prostatic glands opening on xi, xii, and xiii just lateral to the *b* setae, not associated with the male pores. Penial and genital setae lacking. Spermathecae without diverticula. One genus: *Syngenodrilus*; monotypic, *S. lamuensis* Smith and Green.

ICHTHYOLOGY.—*Notes on fishes in the Zoological Museum of Stanford University: XX, New fishes from China and India, a new genus, and a new Indian record.*¹ ALBERT W. C. T. HERRE, Stanford University. (Communicated by HERBERT FRIEDMANN.)

This paper terminates a series begun in 1934. The first paper was a brief account of the fishes of my 1931 Philippine expedition and was published by me in Hong Kong. The series continued with accounts of new or rare fishes collected by me in various parts of the world and was published in various journals in this country.

South China abounds with a great variety of fishes, both marine and fresh water, which even yet are imperfectly known. This is particularly true of the region from Hong Kong southward, which has never been explored by an ichthyologist. Ten days were spent in Hong Kong during March 1941, and many rare cold-blooded vertebrates were secured. Two trips were made to the New Territory to study the fish-pond industry and to do a little collecting. A new species of *Vaimosa* was obtained and is here presented. This genus is rich in species in the regions bordering on the South China Sea, including the adjacent islands.

The coastal waters of India have never been adequately explored for littoral fishes; this is true alike for the coral reefs of the extreme south and the long reaches of the Coromandel and Malabar coasts. Investigation of the coastal waters, including brack-

ish lagoons and the river mouths, should give us a greatly extended knowledge of fish distribution, as well as add many fishes to the known Indian fauna, some new species, and others known only from more or less remote regions. In this paper is recorded a fish hitherto known only from a single Philippine example, but really common in the Bay of Bengal. In addition, two gobies, an eleotrid, and a scorpaenid are presented as new. I have no doubt that collecting in the Andaman Islands would add 200 species to the known Indian fish fauna.

The labors of the competent staff of the Indian Zoological Survey, particularly of Dr. S. L. Hora, have added greatly to our knowledge of the fresh-water fishes of India, and as a result those of northern and central India are fairly well known. Much less has been done on the fishes of the streams of south India, and it is to be expected that new fishes should be found in that region, particularly in the hill streams. I have already described a new catfish from the Anamallai Hills, and now present a member of the genus *Homaloptera* from the same locality. Dr. Hora has already described two homalopterid fishes from Travancore and Mysore. One of them, *Bhavana australis*, was described by Jerdon

¹ Received July 2, 1945.

in 1848 under the name of *Platycaera australis*. Because of its peculiarities Dr. Hora created the genus *Bhavana* for it and extended our knowledge of the fish. The other homalopterid, *Travancoria jonesi*, was first described by Dr. Hora.

The Puthutotam Estate in the Anamallai Hills, where I collected the new *Homaloptera*, is not far from the region in Travancore where both *Bhavana australis* and *Travancoria jonesi* occur, although separated by forest-clad mountains. That the fauna of the two areas is much the same is shown by the fishes common to their streams; one of them, *Travancoria jonesi*, which I also collected at the Puthutotam Estate, is of special interest as showing that it is not confined to the streams at the foot of the Travancore mountains.

The members of the genus *Homaloptera* occur in the East Indies, Malaya, and Burma, and apparently this is the first time that a member of the genus has been found in South India. The earlier accounts of *Homaloptera* from south India all refer to *Bhavana australis*. Burma is the nearest region to south India from which *Homaloptera* has been known hitherto. It is therefore a matter of much interest to students of geographical distribution to find a species of *Homaloptera* in the mountain streams of south India. It has been known for a good while that many of the fishes of south Indian streams have their closest relatives in, or are identical with, species in the streams of Malaya. Dr. Hora has paid much attention to the problems involved, and I agree with his theory that the homalopterid fishes and other torrential dwellers reached south India by migrating along the Satpura Trend.

Lengths given are always the standard length.

Family HOMALOPTERIDAE

Genus *Homaloptera* Van Hasselt

Homaloptera montana, n. sp.

Dorsal II-6; anal I-5; pectoral VI-8; ventral, II-7 on one side, III-6 on the other side; lateral line about 72; transverse series of scales 16-1-12.

The depth is 9.6, the head 4.8, the pectoral 3.8 times in the length; the caudal and ventral

equal the head. The eye is 4.3, the snout 2, the postorbital length of the head 2.5 times in the head; the flat interorbital is a little more than the eye; the least depth of the caudal peduncle is twice in its own length.

The form is slender, the posterior half laterally compressed, the dorsal profile little elevated, the eyes dorsolateral; the snout descends steeply, with rather flat tip; the arched mouth is small, the barbels small and inconspicuous. The dorsal origin is well behind the ventral origin and behind the middle of the length, the distance from the tip of the snout to the dorsal being 52 percent, to the ventral origin 43 percent, of the total length; stated differently, the ventral origin is opposite the nineteenth tubule of the lateral line, the dorsal origin opposite the twenty-sixth. The tip of the pectoral touches the ventral origin when depressed, but the ventral falls short of the anus, which is noticeably in advance of the anal origin. The caudal is nearly truncate, the corners little projecting. The head and entire lower surface back to a little behind the ventral base are naked.

The color in alcohol is brown, the underside yellowish; 10 short dark brown bars across the back, but not extending down to the lateral line; a poorly defined dark longitudinal stripe below the lateral line from the eye to the caudal base; top of the head very dark brown; a blackish-brown spot on the ventral base; caudal with a blackish blotch on its base and another near its tip; other fins all clear.

Described from the type and only specimen, 48 mm long, which I took from a brook on the Puthutotam Estate in the Anamallai Hills at about 3,600 feet altitude, Valaparai Postoffice, Madras Presidency, South India.

Family SCORPAENIDAE

Genus *Scorpaena* Linnaeus

Scorpaena lacto-maculata, n. sp.

Dorsal XI-I-9; anal III-5; about 60 scales in a longitudinal row above the lateral line; 25 tubulated scales in lateral line; about 38 scales in transverse series, 8 from the sixth dorsal spine to the lateral line.

Depth 5.5, caudal 6.9, head 4.18, pectoral 5.8, ventral 7.4 times in the length. The eye is 5.5 times in the head and is a little more than the interorbital breadth; snout 3.4 times in

head. The longest dorsal spine is approximately a third of the head; the longest dorsal rays equal the second anal spine, 2.6 times in the head; the third anal spine is as long as the second but is much slenderer; longest anal ray is half as long as the head. The 6 upper pectoral rays are divided, the 12 lower ones simple.

Interorbital deeply concave, the prominent supraorbital ridge with 3 spines, followed by a large spine behind the ridge; a spine on each side of the prominent hump on the snout; 2 spines, very close together, on each side of the nuchal area; behind the middle of the eye is a group of small spines, followed by a row of 3 rather widely spaced spines; 2 opercular spines; 4 spines on the bony stay below the eye and a row of spines on the hind margin of the preopercle; a spine on the shoulder girdle above the pectoral base. Head scaleless or with a very few small scales on the opercular flap; many tentacles, often large and fringed, on the head, between or on spines, on the broad maxilla and overhanging it, on the chin and along the rami of the lower jaw, on the cheeks, and 2 or 3 small ones on the upper part of the eye ball; simple flaps along the lateral line and on numerous scales on the sides of the body. The large mouth is oblique, the maxilla extending beyond the hind margin of the eye; no palatine teeth.

The color in alcohol is freckled reddish brown, with 2 or 3 bands of darker brown extending across fins and body; just above the lateral line and beneath the ninth dorsal spine is a circular milky spot, larger than the pupil; beneath the eye is a similar but much smaller spot; at the hind end of the soft dorsal base is a larger milky spot, partly on the fin but mostly on the body; the numerous tentacles or flaps below the lateral line are also milky white; these spots and tentacles were probably opalescent in life. The pectorals, dorsal, and caudal have broad pale or white, but not milky-white, cross bands.

Described from two specimens taken from "shallow water near Bombay," India, each of them 222 mm in length. The type is in the Indian Museum, the paratype in the Natural History Museum of Stanford University.

Genus *Brachyterois* Fowler
Brachyterois serrulifer Fowler

Brachyterois serrulifer Fowler, Proc. U. S. Nat. Mus. 85: 79, fig. 35. 1938.

This fine scorpaenid was described from a single specimen, dredged 8.4 miles off San Fernando Point, on the west coast of Luzon, Philippine Islands. To Fowler's description I can add that the pectorals are black and that the ventral rays are also black except basally.

This species must be rather common in the northern end of the Bay of Bengal. One specimen, 73 mm long, was taken by the Bengal Fisheries Department on the Arakan coast. Another of 65 mm was caught off Gopalpur, Orissa. Fifteen examples from 43 to 80 mm in length were dredged at the mouth of the Hugli River by the *Lady Fraser*.

Dorsal XII-I-10; anal III-5; pectoral 16.

Family ELEOTRIDAE

Genus *Hypseleotris* Gill
Hypseleotris raji, n. sp.

Dorsal VI-I-8; anal I-7; scales ctenoid, 28 in lateral series plus 2 on caudal base, 9 in transverse series; 12 predorsal scales.

The body is moderately plump and stout, the dorsal profile well arched, descending steeply from the dorsal origin to the tip of the snout; the depth and caudal are equal, $4\frac{1}{8}$, the head 3 times in the length; the large eye is in the anterior half of the head, dorsolateral, scarcely larger than the broad snout, 4 times in the head; the interorbital is 1.35 times in the eye; the postorbital is slightly more than half the head. The fins are all low, the longest dorsal spine 3.14 times in the head or 9.4 in the length; the last ray of the second dorsal is longest, 2.44 in the head or 7.33 times in the length; the ultimate and penultimate anal rays are longest, 2.2 in the head or 6.6 in the length; the pectoral extends above the anal, 3.66 in the length; the ventrals reach the anal, four and an eighth in the length. All scales are ctenoid, those on the cheeks very small; anal papilla thin, slender, blunt, inconspicuous.

The ground color in alcohol is pale tan, with 4 double cross bands of dark brown, the first over the nape, the last on the caudal peduncle; the ground color appears as pale bands and rows of spots through the cross bands; a blackish-brown cross bar on the caudal base; dark brown bands from the eye on the snout and across the cheek, at least two of them continuing on the under side of the head to meet similar bands from the other eye. The first dorsal is largely black; the second dorsal has a blackish

band basally, then a clear band, the outer third or half blackish; the anal and ventrals have black rays with dark or blackish membranes; the pectoral base has a large dark brown spot, the fin clear; the caudal has 4 circular black spots on its base.

The type and only specimen is a male 33 mm long, taken from the Adyar River, Madras. Named for Dr. B. Sundara Raj, former director of fisheries for the Madras Presidency, who did so much to make my visit to Madras successful.

Family GOBIIDAE
Orissagobius, n. gen.

Dorsal VI-I-8 or 9; anal I-8 or 9; scales large, finely ctenoid, 22 to 24 in longitudinal, 6 in transverse series; a narrow naked predorsal strip, the nape otherwise covered with cycloid scales almost to the eyes; preopercle covered with large deciduous cycloid scales; opercle naked except for one or two cycloid scales at the upper inner corner. Eye large, in anterior half of head, interorbital very narrow; snout short, two-thirds or less of eye; mouth strongly oblique, each jaw with an outer row of stout, enlarged, sharp-pointed and curved teeth, followed by 3 rows of minute teeth, at least the outer rows of teeth visible when the mouth is closed; tongue large, fleshy, truncate or slightly notched; gill opening extending forward to beneath the hind margin of the preoperculum. Fins all elongate, the upper rays of the caudal greatly extended, some specimens with the caudal half the standard length; the antepenultimate ray of the second dorsal longest, equal to or longer than the head, the same ray in the anal nearly as long; pectoral about four-fifths of the head, its base long and fleshy; no free pectoral rays; ventrals large, with a well developed frenum, free from abdomen. Tissues of this fish fragile, showing that it lives in rather deep water.

Type of genus: *Orissagobius cometes* (Alcock). Known only from the Ganjam coast, Orissa, India. Dredged from depths of a little more or less than 100 fathoms, by the S.S. *Investigator*, of the Indian Marine Survey. Eight specimens, 61 to 73 mm in length, were examined.

Genus *Macgregorella* Seale
Macgregorella indica, n. sp.

Dorsal VI-I-9; anal I-8; predorsal scales 4;

about 50 longitudinal scales, 14 in transverse series; the head is entirely naked.

The depth equals the rounded caudal, 6 times in the length; the large broad flat head is 3.47 in the length, its depth 1.6 times in its breadth, which is 1.28 in its own length; the broad blunt snout is 3.95 times in the head; the small eyes are dorsolateral and in the anterior half of the head, 7.3 in the head and 1.38 times in the broad interorbital; the teeth are typical of the genus.

The snout, sides, and underparts of the head are marked by numerous rows of sensory papillae, some of them elongated and somewhat resembling barbels, especially on the chin and underside of the head. A large pore before the inner margin of each eye, and a transverse row of 4 large pores behind the eyes and interorbital space. The dorsals are low, the height of the first 4.75 in the head; the posterior rays of the second dorsal and anal are longest, 8.25 times in the length or 2.375 in the head; the broad pectoral is eight-ninths of the head, 3.88 in the length; the ventrals are typical goby ventrals with a strong and well developed frenum, and are contained a trifle over 5 times in the length or 1.46 in the head.

The color in alcohol is pale reddish brown with 4 broad conspicuous dark reddish-brown cross bands on the trunk and a narrow stripe of the same color on the caudal base; the first band extends upon the pectoral on both its inner and outer faces; between the cross bands are blotches and streaks of reddish brown; the second cross band extends upon the first dorsal, the third and fourth upon the second dorsal; the anal and caudal are obscurely barred by brown.

Described from the type and only specimen, 33 mm long, taken from coral at Krusadai Island in the Gulf of Manaar, Pamban District, Madras Presidency, South India. Such specimens as this show the fallacy of placing all gobies with ridges of papillae on the head, and the body barred with brown, in the genus *Callogobius*, which is marked by weak ventrals with a very slight fragile frenum. In spite of Kouman's assertion, *Macgregorella* is a good genus.

Genus *Vaimosa* Jordan and Seale
Vaimosa adyari, n. sp.

Dorsal VI-I-7; anal I-7; scales in lateral se-

ries 26, plus 3 on the caudal base, in transverse series 8; predorsal scales 7, the anterior one much enlarged and projecting forward between posterior part of the eyes; opercular scales 6.

The compact body is little compressed, the dorsal profile almost horizontal, the ventral profile slightly curved; the depth is 5 to 5.25, the head 3.5, the caudal 2.5, the pectoral 3.33 to 3.8, the ventral 4.2 times in the length. The snout is broad, blunt, convex, 5.2 to 5.5 times in the head; the eye is moderately large, lateral, in the anterior half of the head, in which it goes 3.4 times; the postorbital is slightly longer than the eye and snout together; the narrow interorbital is not more than a fourth of the eye; the oblique mouth is subterminal, the lower jaw weak, the maxillary extending beneath the anterior margin of the eye, or a little beyond; the vertical fins are small, the dorsals rather far apart, the second and third spines of the first dorsal longest, 2.1 or 2.2 in the head, 8 times or a little more in the length; the second dorsal and anal are of equal height, both falling far short of the caudal base when depressed, six and two-thirds or 7 times in the length; the pectoral equals or slightly exceeds the head, 3.5 to 3.8 in the length; the ventrals are broadly pointed, with strong well developed frenum, 1.1 in the head; the least depth of the caudal peduncle is about 1.7 times in its own length; the small inconspicuous anal papilla is slender and pointed in males.

The color in alcohol is very pale yellowish, with 5 short brown dorsal cross bands, the first predorsal, the second under the first dorsal, the next two under the second dorsal, and the fifth on the caudal peduncle; along the middle of the side are 5 oblong brown spots, the last on the caudal base, with another spot below it; on the sides are also scattered flecks of brown; a spot on the pectoral base, one on the opercle, and one below the eye; the posterior half of the first dorsal is black; the second dorsal has 3 cross rows of black or brown spots, the caudal 5 irregular cross rows of brown spots; some of the rays of the anal and ventrals are dotted with black and there are 3 to 5 black spots on the median line of the body between the anal origin and the caudal base.

Described from 2 male specimens, the type 21 mm long and paratype 20 mm, and a juvenile specimen 15.5 mm in length. They were taken by me on January 4, 1941, from the Ad-

yar River, opposite "The Anchorage," the residence of Dr. B. Sundara Raj, former director of fisheries of the Madras Presidency. This is not far from the Bay of Bengal, and the Adyar River is more or less brackish at this point.

Vaimosa crassa, n. sp.

Dorsal VI-I-7; anal I-8; scales in longitudinal series 36, plus 3 or more on the caudal base, 12 in transverse series; predorsal scales 15, extending through the interorbital space to the front margin of the eyes; preopercular scales 9 or 10.

Body thick, plump, only the posterior third being laterally compressed; dorsal outline very slightly arched, nearly horizontal; ventral profile gently arched; the head is contained 3.7 to 3.8, the depth 4.55 to 4.7, the short rounded caudal 4.85 to 5.14 times in the length; the large eye equals or exceeds slightly the length of the snout, 3.8 times in the head; the postorbital is a trifle less than the eye and snout together; the broad interorbital equals or slightly exceeds the eye; the wide mouth is inferior, the maxillary extending beneath the front third of the eye, or almost to its middle; in males the maxillary probably extends beyond the eye. The fins are all small, the vertical fins low, the second spine of the first dorsal 2.2 to 2.6 in the head or 8.3 to 9.5 times in the length, the dorsals far apart; the height of the second dorsal is approximately 2 to 2.4 times in the head or 7.5 to 8.9 in the length; the longest anal ray is 2.3 to 2.4 in the head or 8.9 to 9 times in the length; the anal and second dorsal fall far short of the caudal base when depressed; the short rounded pectoral is 1.3 to 1.4 in the head or 4.85 to 5.5 times in the length; the ventral extends but half way to the anal papilla, 1.85 or 1.9 in the head and 6.8 to 7.2 in the length; the least depth of the caudal peduncle is 1.4 times in its own length. Females have a short, broad, bluntly rounded, and inconspicuous anal papilla.

Alcoholic specimens are marked by broad dark brown diagonal bands inclined forward and downward, with narrow and very pale tan stripes between; one specimen has the head and body before the first dorsal all brown, mottled with dusky. On the middle of the front margin of the opercle is a blackish spot, with a dark stripe descending from it to the underside of the head; a black spot near the upper end of the

caudal base; the first dorsal is blackish, the second dorsal and anal more or less dusky; the other fins are colorless.

Here described from two female specimens,

the type 34 mm long. and paratype 36 mm long. They were taken from a brook near Un Long, New Territory, Hong Kong. No other specimens were secured.

APPEAL TO AMERICAN SCIENTISTS

Many scientists and their families are enduring severe hardships in occupied countries. We, the undersigned, wives of American scientists, want to help these innocent victims of the Axis. We suggest the desirability of supplementing the work of the established relief agencies by sending gift packages of clothing and food directly to individual scientists and their families. Some of us have already sent packages to friends whose present addresses are known, and the acknowledgments we have received leave no doubt of the urgent need which these packages are helping to meet. Used clothing and shoes are genuinely appreciated.

American scientists who would like to send packages to colleagues in the occupied countries may obtain names and present addresses from the Secretary of this group. It is suggested that you indicate the country of your greatest interest and the ages of the children for which you can supply clothing.

A package sent *now* is worth six sent next spring.

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